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REVISION OF THE GRAIN STANDARDS

C & R-PREP.

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(Talk by Clyde W. Jackson, Deputy Director, Grain Division, Agricultural Marketing Service, U. S. Department of Agriculture, Washington, D. C., at the annual winter meeting of the National Soft Wheat Millers Association, Louisville, Kentucky, January 25, 1963.)

Changes in Marketing

Our work in the Agricultural Marketing Service of the U. S. Department of Agriculture takes us into many aspects of our changing agricultural marketing system. With responsibilities ranging from the reporting of market news to preventing unfair trade practices and from measuring the quality of agricultural commodities to expanding markets for them, our work demands close attention to change.

The pattern of grain marketing has changed and continues to change. A very substantial part of U. S. grain never enters a railroad car. Grain moves by truck and water and substantially into areas where grain consumption a relatively few years ago was insignificant. Grain processing for certain uses has shifted to new locations. Approximately 20% of all U. S.-produced grain and 50% of the wheat and rice is exported. We have experienced several years of price and production control. Supplies of several kinds of grain are abundant.

So as to best serve American Agriculture, we in the Agricultural Marketing Service realize the necessity of observing, of being informed, and of bending to the pressures of these changes in the marketing structure.

### First Standards and Inspection

Established grain standards and organized grain inspection services, in some form, have been regularly used in the United States for about 115 years. About the middle of the last century, grain inspection services were started in the principal grain markets, such as New York, Philadelphia, Baltimore, Buffalo, Chicago, and other cities.

The first grain standards by commercial exchanges were very simple. They were based upon the cleanness, plumpness, dryness, coolness, and sweetness of the grain. The standards provided that grain in grade No. 1 shall be clean, plump, dry, cool, and sweet, and that grain in grade No. 2 "shall not be good enough for No. 1." These factors were measured subjectively by the inspector, using his sense of sight, touch, smell, and taste. There was no mechanical equipment available for objective measurement of quality factors.

At that time, the plant breeder had not developed a great number of varieties of grain of varying qualities. Grain was not so

extensively grown under a wide range of soil and climatic conditions. In regard to wheat, flour mills were small and were not specialized in producing flour for different uses. Baking was done in the home by the housewife or by her servants. There were very little, if any, grain exports and no foreign buyers to complain about the poor quality of U. S. wheat. The grain standards and inspection services were in keeping with the times.

Many of our forefathers of a century ago had to struggle to get enough food to keep body and soul together for themselves and members of their families. Today, individuals and organizations, including your Association and high Government officials, are struggling to find ways and means of reducing the huge surplus of wheat and other farm commodities with which this country has been blessed for many years. In this struggle, the grain standards and inspection services are important in aiding the orderly disposition of grain in domestic and foreign markets.

#### U. S. Grain Standards Act

The U. S. Department of Agriculture became active in grain marketing in 1901 when the Bureau of Plant Industry began some preliminary grain standardization studies. These studies were expanded in 1906 when Congress made the first appropriation for this work. Grain investigations by the Department have continued



to the present time. The early years of these studies, and efforts on the part of many interested parties, resulted in the enactment of the U. S. Grain Standards Act in 1916.

This Act, among other things, authorizes the Secretary of Agriculture "to investigate the handling, grading, and transportation of grain and to fix and establish . . . standards of quality and condition for corn (maize), wheat, rye, oats, barley, flaxseed, soybeans, and such other grains as in his judgment the usages of the trade may warrant and permit, and . . . to alter or modify such standards whenever the necessities of the trade may require." The Act also authorizes the Secretary of Agriculture to license persons to inspect grain under the Act and to handle appeals from those inspections. One of the primary purposes of the Act is to effect uniformity throughout the United States in the methods of measuring and expressing quality of grain.

The first official grain standards of the United States were promulgated for corn in 1916. Official standards for wheat were promulgated the following year and those for the other grains were promulgated over a period of years, the last of which were for flaxseed in 1934. All of these standards, except those for grain sorghum and flaxseed, have been amended or revised many times.

### Increased Inspections

Official inspections of grain in the United States have steadily increased over the years and more than 3 million inspections are now performed annually. These inspections are performed by more than 700 licensed grain inspectors at about 400 inspection points. The number of appeals from these inspections during recent years have ranged from about 35,000 to about 95,000 each year. Licensed grain inspectors are not Federal employees. They are licensed by the U. S. Department of Agriculture and are employed by States, grain exchanges, boards of trade, and chambers of commerce, and in some cases, they operate on an independent basis. Employees of the Agricultural Marketing Service supervise the work of licensed grain inspectors and handle appeals from their inspections.

### Purpose of Standards

The basic purpose of the grain standards is to provide a "yardstick" for classifying grains according to quality for trading purposes. If standards are so loose that they fail to distinguish between lots of grain differing considerably in those factors of quality that can be readily measured, they fail to serve the purpose for which they were intended. It would seem that the grades should be such as to create price differentials at all levels of trading, based on quality.

Members of your organization are primarily interested in standards and inspection services for wheat. Even though the wheat standards have been revised many times since they were first promulgated in 1917, most of these changes were minor in character. A major revision of these standards was made in 1934, and the last revision became effective June 15, 1957. Some of you may remember the important wheat standards conference that was held in Washington in 1955 by our Grain Division to hear the views of the representatives of national associations and Government agencies interested in the marketing of wheat. Subsequent smaller conferences and efforts by the Department and others resulted in some important changes in the wheat standards two years later.

After all the changes that have been made in the wheat standards and all the valuable wheat quality studies that have been conducted, the official wheat standards today are designed to measure about the same characteristics in wheat as did the grades and standards used by States and trade associations a century ago. Of course, some of the methods used today in the standards are more objective and precise, but they still are designed to measure the cleanness, plumpness, dryness, coolness, and sweetness of the wheat. These qualities are important, but there are others that are equally or more important for determining the value of wheat for certain uses.



Wheat is used primarily for the production of flour for the baking of bread and other products. The wheat standards, therefore, to be most useful in measuring quality factors that will reflect the quality of the products made from wheat, must encompass methods and procedures that indicate such quality characteristics. Why has this not been done?

One of the reasons is that the official wheat standards are mandatory under certain conditions for wheat sold and shipped or offered for shipment in interstate and foreign commerce. The methods and procedures used to apply the standards must be relatively simple, inexpensive, and rapid in order to be practicable for use at the different levels of trading. Several objective quality tests for wheat have been developed. Some of them have not been incorporated in the official standards largely because they do not meet the practical requirements of simplicity, cost, and speed of application.

Your principal interests in wheat are concerned with soft red winter and white wheat. These are the principal types of wheat in this country used for flour for cakes, biscuits, pastries, and crackers. Such wheat is also used for milling all-purpose flour and for blending with stronger wheats to produce bread flour.

Some of the tests that have been developed to measure wheat quality objectively, that may be of special interest to you, are the sedimentation test and the fat acidity test.

### Sedimentation Test

The sedimentation test, developed by our laboratory at Beltsville, Maryland, has been designed as a simple and rapid way to estimate the strength of wheat. It does not require the elaborate milling equipment usually needed for bread-baking or dough-mixing tests.

The test may be completed in from 15 to 20 minutes or in an average time of about four minutes when eight tests are made simultaneously. The equipment required is relatively simple and inexpensive. When all details of the procedure are followed, there is no serious difficulty in obtaining good agreement among different operators making the test. Sedimentation values range from about 3 for very weak wheat to about 70 for the strongest wheat.

It has been suggested that the present classes of Hard Red Winter Wheat, Hard Red Spring Wheat, and Soft Red Winter Wheat be combined into a single class called "Red Wheat," and that the sub-classes under this class be based upon the sedimentation value.

No serious consideration has been given to proposing this change in the standards. Such a change, however, would provide a more objective and accurate method for distinguishing the different